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Special Contributions.

The American Pomological Society.

Address at Chicago, Sept. 8th, by President Marshall P. Wilder.

WE assemble here at the invitation of the Illinois State Horticultural Society, to whom, and to the Inter-state Industrial Exposition, we tender our grateful obligations for their courtesy and the arrangements made for our accommodations.

Twenty-seven years have taken their flight since the organization of our association. Many of those who assisted in its formation rest from their labors; but some of them are here to rejoice with us to-day in its progress, prosperity and usefulness. Our society still lives in a fresh and vigorous manhood, and we are permitted once more to assemble for the promotion of the objects so dear to its founders and so essential to the welfare, not only of our common country, but of all mankind. Like all other associations and enterprises, it has had to pass through its years of pupilage before it could arrive at its present state of knowledge; but it has now attained to manhood, and is able to act with an energy and enterprise which give promise of long life and still greater usefulness. It has celebrated the first quarter-centennial of its history, and now awaits a fuller and more glorious development of the benevolent purposes for which it was established.

Gentlemen, your presence in such goodly numbers affords me the highest gratification and encouragement. I am most happy to meet so many of our Western cultivators, whose personal acquaintance I shall be glad to make; and I am especially pleased to recognize many whose names are honored for the contributions they have made to the cause of science, and will be cherished as long as merit shall be appreciated and worthy deeds command the gratitude of mankind. This is as it should be; and, coming as we do from distant and different sections of our extended country, embracing almost every variety of soil and clime, we are enabled, in a short time, to accomplish much in comparing the effect of temperature and other climatic influ-

ences on the fruits of our different localities, and by our record of experience to decide on the kinds suited to our various districts; and thus build up the science of American pomology.

Our society has held its meetings in the various quarters of our country—East, West, North and South; and now it assembles for the first time in this great commercial centre of the West. It has been extending its jurisdiction and influence with every session, until it embraces the whole Union, and the Provinces of Great Britain that lie on our borders. It has officers and local committees in all these sections of our land, and has assumed the vast work of designating fruits which are found to be congenial to the various soils and temperatures of fifty states and districts that are named on its catalogue. When we consider that these results have been secured without governmental aid or public patronage, and simply by voluntary association, and how long it has taken old and richly endowed institutions to make their influence felt on the world, it is a matter of surprise that our association should have impressed its importance so deeply, not only on the minds of our people, but on the nations of the Old World. How distinctly do we now see the wisdom and foresight which prompted the founders of this society in the formation of a national institution, whose example should be followed by the nations of Europe, for the promotion of the same science.

The fruit culture of America has surprised the world. Like the genius and invention which characterize this nation in other arts, it has taken its stand as the forerunner and herald of a new era in the history of pomology. Yet, gentlemen, we have scarcely entered on the vast field which we now occupy. We have but just seen the dawning light of our science, which is yet to illumine this great Western world. True, we have planted our ensign in almost every section of the country, we have stationed our pioneers from the Atlantic to the Pacific, from the Lakes to the Gulf, and have gathered into our fold the most experienced and enterprising cultivators of our country, and we have already produced many native fruits, which are not surpassed by those of foreign climes. But when we reflect that our country is constantly expanding and increasing in its territory and population, to which no human foresight can fix a limit, we see the grandeur and importance of our work.

The progress of fruit culture is especially evinced by the improved methods of cultivation, the high standard for quality, the great quantities of fruits now sent to market, the improved methods of packing, and the increased facilities for transportation, not only to all parts of our land, but for foreign exportation, so that at this writing two thousand and four hundred baskets of peaches are on the way to England, by steamship, for a market.

Nor is this progress confined to the fruits of our Northern clime. This interest and enterprise has exerted a powerful stimulus in the Southern, Southwestern, and Pacific States, not only in the culture of the grape and other Northern fruits, but of the orange, the olive, almond and fig, for commercial purposes, which, as a national society, we are bound to include in our sphere of action. How great would have been our surprise if we had been told, at the formation of this society, that, at its quarter-centennial celebration, magnificent oranges and lemons would grace the exhibition from Mississippi and California; and still more strange should we have thought the prophecy that the latter state would have groves and plantations of the orange to the extent of hundreds of acres at the present time; or what would have been thought of the interest now manifested in Florida and the Southern States, giving promise of a great future for the culture of semi-tropical fruits in America. Within a few years a new zeal has sprung up for the culture of these precious fruits, which give hopes of a development of resources that may rival those of the most favored foreign climes. Already thousands of acres have been assigned for the culture of these fruits, which cannot fail ultimately to become valuable, subject

only to the losses which always occur in the beginning of a new enterprise, from want of experience on the part of too sanguine operators.

But what shall we say of the grape, now multiplied into hundreds of varieties, some of which are suited to every portion of our land. Many present can remember the time when the Isabella, Catawba and Scuppernong were the principal varieties in cultivation, and when not a seed had been sown for the production of a new variety. Now, millions of seeds are sown, and from these thousands of new and varied offspring arise, some of which are constantly taking their places on our catalogue. Instead of two or three varieties, as in former years, we have the collections of Ricketts, Bush, Campbell, Moore and others, containing a hundred varieties or more, and from which, in all probability, some valuable kinds are in time to be added to our list for cultivation in some section of our country. Nor should I omit the wonderful fact that within the borders of these United States may be produced, in amazing abundance, every variety of grape known to foreign climes, and from which, ere long, may also arise native varieties of equal quality and adaptation to the soils of our Western coast. In the words of Prof. Gray: "A good time is coming for the grape. New varieties can be produced so easily that they will have achieved their position when the American Pomological Society holds its centennial celebration."

Nor is there any reason to doubt that, as with the pear and other fruits, new varieties of the orange, lemon, almond, olive and fig may be produced of equal or better quality than any we now possess, and adapted to a still wider space of territory. Of the fig and the raisin as articles of commerce, Dr. Strentzel, our Chairman of the Fruit Committee for California, writes that a wide field is opening on the Pacific coast, and we believe that both these and the orange will be greatly increased in the extent of their cultivation and general use. The total yield of raisins in California last year was estimated at four hundred tons, valued at nearly eighty thousand dollars.

Have you ever, my friends, thought of the significance of the phrase, "American pomology," a phrase till lately unknown among us? Think how recently the fields which now furnish the majority of fruits were the abodes of the red man in the forest wild, and look for a moment on the contrast. What a grand display of our annual product of fruits! What mountainous heaps of apples, pears and grapes! What millions of baskets of peaches and strawberries! And yet how limited the product when compared with the harvest of that measureless breadth of acres which are to be covered in the future with these fruits. How emphatically do these point to that important part which our association is to play in the development of the fruit resources of this continent, and in helping on the grand end of human happiness. Gratifying and wonderful as our progress has been, it is but as a glimpse of the morning compared with the noon-day glory, when these rich gifts of Providence to our favored land shall have arrived at their full development. The grain and other manifestations of material wealth, with which our country abounds, are the reserved stock, upon which the nations of the Old World rely to meet the insufficiency of their own crops; and the time will arrive when the fruits of our land, now becoming so popular in foreign markets, will be required by the imperative demand for these products, and without which the comforts and happiness of life would be greatly reduced. It is therefore our duty, as benefactors of mankind, to develop these immense resources of our country, and to increase our fruits to their fullest extent; so that, from our Eastern to our Western shores, they may be distributed in abundance, not only to the wealthy, but to all classes, as a part of their daily food. The trees we plant live to bless the world and enrich the inheritance of our children long after we are laid beneath them, and, with the return of each successive season, to shed their fragrance on the air and crown with golden fruits the harvest of the year. Nor are these blessings only for a day or an hour.

"Another crop the following year supplies,—
They fall successive, and successive rise."

Mission and Importance of the Society.

Gentlemen: I have often addressed you on the importance and mission of this society, and I was inclined to refrain from further remarks on this subject; but the more I reflect on it, the more am I impressed with the imperative obligations which rest on us to do what we can in our day and generation for advancing its great interest. In the providence of God, our society has been made the leader of pomological progress on this continent.

"There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune,"

and there is a tide in the affairs of institutions as well as of individuals. We seem to live in a peculiarly favorable period for the promotion of our art. When we consider that our society was the first national institution of the kind, and that its example has been followed in so many other nations, we may take it for granted that the methods which we have used are the best for the acquisition and the diffusion of knowledge on this subject. These considerations impress us with the importance of our work, and the duty to dovelop, on the virgin soil of this Western continent, the wonderful resources which have for long ages lain hidden in the arcana of pomology. Nor is it singular or strange that they should have remained thus unknown, for Providence puts it into the hearts of men to work together for the advancement of His grand designs by the development of the resources He has kept in store, to ameliorate the condition and increase the happiness of His children, no faster than the age is prepared to receive a more refined and higher civilization. Thus was it in the discovery of this country, with its vast agricultural and mineral resources; thus in the declaration of its independence as an asylum for the oppressed of the world; and thus in giving us the illustrious men who have led the way in the march of civilization, which characterizes the age in which we live,—

"That every blessing may be ours
Which Providence has given,
To every land and clime beneath
The canopy of heaven."

Thus He gave us Columbus and Vespucius, Franklin and Morse, Washington and Lincoln; and thus He gave us, not less efficient in their spheres, Coxe and Prince, Buel and Thomas, Dearborn and Manning, Downing and Brinkle, and Kennicott and others, who now live for the promotion of American pomology, and with them the assurance that He will raise up those who shall carry on the work when we are gone.

Standing, then, as we do to-day, in this great commercial city, which but a few years ago had only a beginning,—looking down the Atlantic slope and stretching our vision over to the Pacific coast, and from the Lakes to the Gulf, and embracing within our recollection the entire history of pomology which has made our nation so renowned, who does not feel a desire to aid in its promotion throughout the whole domain. For myself, I yearn that my life may be prolonged to witness its further advancement; and, should I be called to depart, I pray the good Lord that He will make me a ministering angel to earth, so that I may still witness its growth. Permit me to say that I esteem more the privilege of having been a co-laborer in this most beneficent work, than in any other with which I have been connected; and I appreciate more highly the favor of the official position with which you have so long honored me, than that of any other which has been conferred on me during a somewhat protracted life of public and private service. Pardon me, gentlemen, for these personal allusions; but when I reflect that this is but the youth of this society, and contemplate what its maturity will be; when I reflect upon the blessings which have resulted from the labors of its members; when I contemplate the happiness that it is to confer on future generations, when our vast territory shall be peopled by an enterprising population, elevated in the arts and refinements of life,—my heart rises in gratitude to the Giver of all good, that He has permitted me to be a humble co-worker

in what has already been accomplished by the diffusion of our precious fruits,—far more precious than all the gems that have come down through a long line of monarchs.

The Published Volumes of Proceedings.

And here let me acknowledge the great aid which has been rendered to our association by the co-operation of the press, and the agricultural, horticultural and other kindred institutions, so numerous in our land, most of which have taken an interest in our work and the growth of our association. Thus the concentrated efforts of a thousand societies and thousands of experimenters are uniting their efforts with ours, and through us are urging on the good work, and making the published proceedings of this society, as they ever should be, the acknowledged pomological authority of the land. Let me state, for the information of our recent members, that these have been regularly published from the organization of the society, and comprise, in a condensed form, a mass of information on the pomology of this country, and the adaptation or non-adaptation of fruits to its several localities, such as is nowhere else to be found.

Few are aware of the time and labor which have been expended on these volumes in preparing them for publication. They embrace the life-work and the concentrated wisdom of a generation of the wisest and most experienced cultivators of our own times. In the language of our worthy friend, Mr. John J. Thomas, "*No other similar institution has attempted so much as this society, and no other has accomplished so much.*" Into these volumes this information is condensed so that not only the people of the whole country but those of foreign lands can avail themselves of it. Formerly these were published in octavo, but the last two are in quarto form, and constitute, as I have before remarked, a pomological library in themselves. Especially is this the case with our Catalogue of Fruits, embracing, as it does, columns for fifty different states and districts, into which are compacted the lists of fruits for each. These states are grouped into divisions, somewhat similar in climate, and other characteristics affecting their culture, the names of the fruits being all classified and arranged in alphabetical order, with their synonyms, and with marks indicating their value for each section of our country.

General Chairman of the Fruit Committee, Mr. Patrick Barry, is constantly in correspondence with the various state and local committees in regard to the merits of the fruits which come under their notice, thus establishing the value of each, so as to secure approved lists of the different species of fruits cultivated in this country. Nor should it be forgotten that all these services have been rendered without any pecuniary compensation to our officers, except to a secretary for a few years. And here let me express our obligations to Mr. Henry T. Williams, secretary *pro tem.* at the session of 1873, for his liberality in tendering the sum which would have been his due for his services in the compilation of our last volume of proceedings, and also to our secretary, the Hon. W. C. Flagg, for the generous interest in the welfare of the society which prompted him to decline the usual salary; so that the services of all officers are now rendered gratuitously. Especially to be remembered with gratitude are the faithful and efficient services of our treasurer, Dr. Thomas P. James, who, from the organization of the society, has performed the duties of the office without any other recompense than the satisfaction to be found in their conscientious discharge. Our funds, being all derived from membership, have never been abundant, and some incidental sums have been occasionally paid to keep a balance in the treasury; but were they more abundant they would materially assist in promoting the objects of the society and the dissemination of its publications; and permit me to say that no better disposition can be made of this world's goods than to give a portion to our society, so that its bureau might be in constant working order, with ability to distribute its publications throughout the country.

In this connection, I think it proper to state that one example worthy of imitation

now exists in the generous intentions embodied in a will, already executed, by which the American Pomological Society is to receive ten thousand dollars at the decease of the generous devisor, which we hope may be far in the future. Let others go and do likewise!

[To be continued.]

Notes on Conifers.

BY JOSIAH HOOPES.

NOTWITHSTANDING the experience of a single individual proves nothing as to the hardiness of a certain class of trees, yet it is interesting oftentimes to hear how others are succeeding with the more variable species. I say it proves nothing, because, in many instances, the experience of a neighbor may perhaps be almost the reverse of our own, with the same variations of climate, and to all outward appearances the same character of evil.

We have very much to learn about the diseases and constitutions of our trees, for our conclusions heretofore have been in a great measure based upon "guess-work," whilst ignoring the fundamental laws that govern the life of the vegetable world. Trees that have been once injured by the winter are more liable to succumb to the cold of the succeeding season than those not previously injured; their organism appears to be affected without giving an outward evidence, in many cases. Another point too often overlooked is the need of moisture during excessively cold weather,—as a drought during an intensely cold winter will not unfrequently destroy certain so-called hardy species, which otherwise would not be affected.

Conifers are somewhat peculiar in not showing their state of health until the growing season arrives, many species looking apparently all right, and lulling us into a belief that they are in excellent health, only to be deceived after a few warm days show the true state of things.

Among the newer Spruces, the *Abies polita* has proven entirely hardy, beyond a doubt. The latest novelty among our native species, *A. Engelmanni*, does not lose a leaf; it is entirely reliable. *A. orientalis* and *A. obovata* maintain their past unexceptionable high character. *A. Smithiana*, or, as it is usually known, *A. Morinda*, has been severely cut up, save when well protected. *Menzies' Spruce* has done reasonably well, but it presents a somewhat stunted appearance. The new Japanese Spruce, *A. Alcocquiana*, is entirely uninjured, and I now place confidence in its ability to endure our climate.

Among the Firs, the *A. firma* is one of the most distinct and valuable. During the late winter and spring, *A. Nordmanniana*, *A. Pichta*, *A. Cephalonica*, *A. nobilis* and *A. grandis* have all preserved their foliage well, and are now growing vigorously. The unreliable *A. Webbiana* and *A. Pindrow*, as usual, are badly injured. *A. bracteata* will persist in dying every winter,—I am done with it in the open air. *A. Pinsapo* has wintered tolerably well, but I took the precaution to protect it with evergreen brush.

Among the Hemlocks, I am pleased to say that *A. Albertiana* and *A. Pattoniana* (whether distinct species or not, I am not yet prepared to assert) have stood the test nobly; although an English grown specimen of *A. Mertensiana* is dead, root and branch. I have the same record to make with *A. Douglasi*, a magnificent tree, but one that persistently declines to stay alive in my collection. The *Cunninghamia Sinensis*, *Cephalotaxus* family, and the *Torreyas* look pretty well only; I wish I could say more. The Umbrella Pine, *Sciadopytis*, is entirely reliable; not only during the past winter has it stood the test, but for several years past. Lovers of beautiful trees, please make a note of the above. As for the *Sequoia gigantea* (California's Big Tree), *Cupressus Lawsoniana*, and *Cryptomeria Japonica*, my patience is entirely exhausted in endeavoring to save them.

The Yews have fared unusually bad, this season; although not entirely killed, they are all, with probably two exceptions, disfigured. The two which have weathered the winter are *Taxus cuspidata*, from Japan, and our own

native species, *T. baccata var. Canadensis*. True, the many varieties of the English Yew are growing as vigorously as ever, but they were all badly scorched.

Among the Junipers, the *J. oblonga pendula*, one of the most ornamental little plants in existence, was badly cut up; as were *J. Japonica*, *J. sphærica*, *J. drupacea*, etc. The *Irish Juniper* generally did well, excepting in a few isolated instances.

The many forms of the *American Arbor Vitæ* are looking remarkably well,—all, indeed, I might say, excepting the *Heath-leaved varieties*, and that dwarfest of dwarf forms, the *var. pygmæa*. Two large specimens of *Thuja gigantea*, by being well protected, came through finely, but younger plants, although well covered with evergreen boughs, were nearly all killed to the ground. It is very unreliable. *Libocedrus decurrens*, upon whose hardiness I so much depended in past years, has been hurt badly,—at least, all the previous season's growth is injured severely. And even the *Cupressus Nutkaensis*, or, as it is often called, *Thuiopsis borealis*, was browned to some extent when the cold north winds had full sweep at it. *Thuiopsis dolabrata*, as usual, has had all of its branches curtailed, and now is anything but handsome. The different varieties of the *Chinese Arbor Vitæ* are all more or less injured, but they seem to possess the power of recuperating sooner than most other Conifers. Already, as I write, the young growth has covered the disfigured portion, and before autumn they will be as handsome as ever. As for the new *Retinisporas*, that nondescript genus, they are in capital condition; not a failure in the whole family to record. Whether they are deserving of a separate classification or not, according to botanical rules, they are peculiarly hardy and especially beautiful. The *Podocarpus Japonica*, the only species out of a very large genus that is reasonably hardy, has been hurt badly with me, yet usually it is quite reliable. Altogether, we should feel thankful that our trees have escaped so well, when we feared so much.

The Greenhouse.

Greenhouse for October.

THE season is now fast approaching when the only floral attraction must be indoors, and at the present time plants in flower must receive special attention to prolong the season of blooming, for the winter blooming plants are yet scarcely in full flower, and most of the summer bloomers are over for the season. If there is spare room, a few specimen Coleus, late Caladiums and bright colored Dracænas will give color and make the house temporarily gay until flowers are more plentiful. A few of the better varieties of Cannas if taken up before checked by frost will make a show during winter and be useful for cuttings—the shoots for mixing in large vases of flowers. After this time a slight fire may be required, cold nights, even in a cool greenhouse, for in this latitude we occasionally get quite sharp frosts for a few nights, although after a few cold nights there is often none for a considerable time, but it is necessary to be prepared.

The season has been so wet, that probably in some cases, laying in a stock of soil has been postponed until the present time; if so, no time must now be lost in securing a full supply, for it is not likely to be in better condition later in the season.

Any outside painting not yet finished must be pushed forward, for after this time the roofs remain wet late in the morning and become damp early in the afternoon, so that the painter's day is short.

Large plants of Camellias, Azaleas, etc., should now occupy their permanent places, to be filled in with other plants. See that pots and plants are clean and a fresh surface of sand or ashes placed on the benches before setting the plants.

Climbers on the roof must be thinned out or cut in if too thick, the remaining shoots can be trained in closer to the roof. Such plants as Passiflora princeps we find seldom require much cutting, for we cut the flower shoots and also some of the strong shoots

without flowers for decorative purposes. Thunbergia Harrisii will commence flowering at the end of the month, and will not require cutting until spring, but this is a light growing plant and is best trained in close to the wire, for the racemes of flowers will hang down. Tacsonia Exoniensis is a capital addition to our list of greenhouse climbers; it is a lovely color and a very free bloomer when planted out, but must have a liberal cutting after blooming or it will overgrow everything.

Lapageria rosea will now be in full beauty. The flowers of this lovely climber are much larger and brighter in the winter than earlier in the season. The flowers of this plant are charming for baskets of cut flowers, and they last a long time. The white variety is more lovely then the rosea; we have it in flower at the present time, and visitors admire it more than any other flower. It is unfortunate for growers of limited capital that this plant is, and always will be, high priced. If it is offered for sale below ten dollars, buyers may conclude that it is not the true variety.

Eucharis, in variety, required to flower during winter must be kept warm and receive plenty of water. It is best not to syringe the foliage after this time; the wet often causes the leaves to spot; but wash the leaves with a sponge and soapy water occasionally, keep the plants rather dry for a short time before they are required to flower, but not dry enough to turn the foliage yellow; this will cause the flower stems to throw up. The Candida variety is very useful for bouquet making, and is, if possible, a freer bloomer than either Amasonica or Grandiflora. Small plants in four-inch pots have flowered several times during the summer.

Marantas will now require less water and kept as warm as possible, and unless the temperature is very high, the foliage must not be watered, for it is easily discolored and the beauty destroyed. If red spider is troublesome, wash the leaves with a mixture of soap and sulphur, but unless grown in a very dry, hot place, it is seldom any trouble. It must be remembered that tubispatha looses its foliage in the winter, but most of the other species are evergreen.

Alocasias will require the same treatment as advised for Marantas. Be careful not to get them too wet or the roots will decay, and if allowed to lose all the foliage, the roots often die.

Anthuriums will require but little water during winter, generally a sprinkle over the surfacing moss with an occasional watering is sufficient, especially if the plants are grown in a temperature of fifty or sixty degrees. We expect these plants will be grown very extensively when better known, they are so little trouble, and where a quantity is grown, it is in flower all the year. Cut flowers in water will last for weeks.

Camellias.—A few of the early plants of such varieties as Lady Humes Blush, will now commence to open flowers, and will be useful when there is a demand for these flowers so early in the season; the flowers are usually small, but other flowers are scarce and the size is not noticed so much as later in the season. A good washing of the foliage with a sponge not only improves the plant, but the foliage looks as if fresh varnished. The same remark refers to Gardenias; if any insects infest these plants, a good washing with soapy water to which is added a small quantity of kerosene, will kill the insects and much improve the look of the plants, but if Gardenias are planted out in the open ground during summer, insects are seldom troublesome, and the plants are in much better condition than if grown in pots.

Azaleas will be generally at rest excepting a few of the late growers and young plants. Give plenty of light and air and a good soaking of water when necessary, but large plants will not become dry very fast at this season unless standing in a very dry place. Mention of a few of the best old varieties may be useful to some of our readers. The sorts mentioned are all good and distinct flowers, of good habit and low priced.

Flag of truce is no doubt one of the best double white varieties for cut flowers.

Amœna, semi double, good for bouquets.

Alba illustrata plena, good double white.

Belle Gautoise, lilac, edged white, carmine blotch.

Bernhard Andreas, bright rose, very double.

Borsig, fine double white.

Chelsonii, light orange, scarlet.

Duc de Nassau, rosy carmine, semi double.

Duchesse de Nassau, fine rosy scarlet.

Eulalie Van Geert, variegated.

Exquisite, pink edged, white.

Leeana, fine large white.

Model, fine rose, splendid shape.

Narcissiflora, double white.

President, salmon red, margined white.

Reine des Pays-Bas, white spotted amaranth.

Rosea superba, fine rose.

Souvenir de l'Exposition, white striped and spotted rose.

Stella, pale orange, shaded violet.

Souvenir du Prince Albert, fine double, rose edged white.

Gledstanesii formosa, white striped carmine.

We might extend the list to hundreds of varieties of good, poor, and indifferent sorts, including a large number of distinct and excellent varieties, but few of our readers have space to grow more than a dozen or two sorts, and those named, include the most distinct in each color with several white varieties which are in demand for cut flowers.

Roses in pots for winter flowers must now be protected from heavy rains. It is best to plunge the pots in sand or ashes, it keeps the roots moist without frequent watering. If there is any appearance of mildew or green fly, it had better be checked by a good washing with tobacco water in which some soap has been dissolved, and a little flower of sulphur mixed. A washing with this is a good preventive at this season, and does the plants no harm. Roses on roof should have all the weak useless wood thinned out, the long shoots shortened and tied into place and receive a good washing with the above mixture. There is often some mildew on young growth of plants on roof caused by cold wind in giving air at top of house; this is difficult to prevent entirely with a mixed collection of plants growing in the house; if it was only roses we might fasten thin canvas over openings and give less air, but, by doing this, other greenhouse plants would suffer. Another frequent cause of mildew is getting the plants dry at the roots; this may be frequently seen out of doors in autumn, when weather is very dry and heavy dews at night.

Winter forcing plants must be potted at this time, such as Deutzia gracilis, Astilbe, Japonica and hardy Rhododendrons and Azaleas for cut flowers. These plants can be either potted in as small pots as possible, or if only required for cut flowers, several can be placed together into a box, which will occupy less room; the plants can remain in a shady place outside until hard frosts commence, when they can be placed in a cold frame or cold cellar until required for forcing. It is well to have a double quantity of these hardy plants to be able to force one batch and rest the other for a year. Plants which are grown in a strong heat for early blooming seldom make much wood the same year, in fact many of them are not worth growing again and had better be thrown away in the spring. A few young plants propagated each year will keep the stock up for that purpose, and will make much more growth than old exhausted plants. We often receive plants of new species which have been so forced for stock, that it is difficult to make them grow at all; the best we can do is to get a few small cuttings and throw the old plants away; it is the same with early forced shrubs, they make their growth out of season, and probably most of the growth is cut with the flowers. There is seldom room to keep the plants indoor to make any growth, and it is late in the season when planted out before they make a start, so there is little flowering wood for the next season, but if the plants get a season's rest from forcing, they usually do well the season after unless they are entirely exhausted; in this case it would be best to discard them instead of being to the trouble of planting.

Cannas and Dahlias should be taken

up before the foliage is much injured by frost or they will not keep well. Under stages in cool houses or in a dry cellar free from frost is the best place to store these roots. Many of the new Cannas are splendid, both in foliage and flower. We shall give a descriptive list at the end of season of all the best. This will give our readers the opportunity of selecting dry roots if they wish. We cannot give heights until end of season, for many sorts grow much stronger here than in Europe, so that their height is often much exceeded here.

What splendid plants the Bananas are in this climate for subtropical gardening, especially Musa ensete. The foliage which is on the plants when planted out usually becomes unsightly and the plants are very scrubby for a time, but soon recover, and each new leaf increases in strength and beauty, so that the wind does not injure it unless planted in a very exposed situation.

The *Cyperus papyrus* is another valuable plant for this purpose, but it requires planting in a moist place or to receive abundance of water. These plants have a much more noble appearance either as single plants or planted in masses than the general run of bedding plants, and may be employed either in a small garden or a large park.

Ficus Parcellii is one of the best variegated plants ever introduced; it is a free and yet compact grower, and as easy to cultivate as the old India rubber plant. It fruits when quite small, and the fruit is variegated like the foliage. This plant should be in every collection. We may mention that it does not import very well, for out of three we imported, two were dead, and several people have informed us they could not import it alive, but it can be obtained in this country at a moderate price.

Caladiums will be generally at rest by this time. The pots can be placed under the stage and kept dry in a temperature of about sixty; if placed in a cool house the bulbs are sure to decay. We find they keep best in the soil in which they were growing.

Cyclamens if not shaken out from old soil should be done at once, and potted in same size, and a little larger pots according to size of bulbs; these plants grow best in the warmest part of a cool house. Seedlings must be potted into small pots and grown on in a warm place.

Primulas and Cinerarias must be potted into blooming pots and kept growing freely.

Pelargoniums must have plenty of air, and when rooted freely will require more water. The points of the shoots must be pinched out to induce a bushy growth, but be careful to stop all the shoots at one time, or those not pinched will take the lead and the growth will be irregular.

Geraniums for winter blooming will want a light, warm place with plenty of ventilation. These plants must not be crowded together or but few flowers need be expected. Young plants must be kept free from dead leaves and be allowed to get rather dry; the growth is hardier and the plants keep better.

Verbenas.—Keep as cool as possible with ventilation day and night when weather will permit; a little frost will do less injury than a close, warm house; fumigate frequently to prevent green fly and thrip, and never allow the plants to become dry; the same rule is applied to other hardy bedding plants.

Orchids.—There will be but few of these plants in flower this month, in fact this and the two previous months is the scarcest time in the year for these flowers, partially from the cool weather this summer and from the great length of flower shoots. We had Peristeria elata in flower from the beginning of July until September; if it was possible to induce this plant to flower at Easter it would be worth any money. We have still Cypripedium Rocali in flower and some of the Lygopetalums commencing to flower; these with a few Odontoglossums and Oncidiums are about all to be expected in bloom at this season. Most of the plants will be at rest and will require less water; the syringe can be dispensed with except for plants on blocks; these will usually require water on bright days if grown on the bare block, but not so often if the roots are growing in moss. Most

of the Dendrobiums will have finished growing and will require but little water and abundance of light, but do not keep them dry enough to shrivel or they will not flower well and flowers will be small.

Nepenthes require a strong heat at all times, and the plants being natives of swamps must be moist at all times. These plants are among the most easy to cultivate if these few requirements are noted.

Primula Japonica.

AFTER several years' trial to obtain plants from purchased seed of this handsome Primula, I am, through the kindness of a friend, at last able to say a word in its favor. I do so particularly, because on many occasions, on making inquiries about this plant, I have invariably been told that it was of poor quality—in fact, not worth growing; from such statements I dissent. It can be grown well, particularly from some ripened seed, if sown as soon as saved. It should be sown thinly on a compost of light loam, leaf-mould, and fine, clear, sharp, silver sand, and covered lightly, or, what is still better, after sowing gently shake the soil in pots or pans by striking on the outsides with the palms of the hands, after which gently press the surface down with the bottom of a pot, or, if convenient, a circular piece of thin board,—such as is used in the manufacture of cigar-boxes answers admirably for light soils,—then cover with a piece of tissue paper. Under such treatment the compost on which the seed is sown must be fairly damp, but not wet, which dampness it will retain long enough for the seed to vegetate if it is not allowed to become dry. Place in a cool but close pit—a hand-glass will do, if nothing else is convenient. As soon as the seedlings are up, and fit to handle, prick out into the above-mentioned compost in pans or boxes, keep close, and moderately shaded for a few days. As soon as the plants begin to encroach on one another, shift into large sixties, using the above compost. Keep in a cool frame with partial shade, and shift as requisite, using with the above compost some decomposed cow manure if possible. After the plants have been transferred to six or seven-inch pots, according to sizes, and as soon as the roots have taken to the fresh compost, and are coming in contact with the sides of the pots, a little liquid manure (diluted) from either cow-house or stable, particularly from the former, will be very beneficial. Encourage growth as much as possible. During October, or the beginning of November, the plants will be showing symptoms of resting; diminish the supply of water, and keep the plants as near the light as possible, so that the crowns may properly mature. Although the foliage will die off, the plant must not be allowed to suffer through want of moisture. On the return of spring, and as the plants show signs of growth, increase the quantity of water, giving at the same time, proportionate with growth, liquid manure. As soon as the plant has thrown up its first flowering scape, and the first whorle of flowers commences to expand, partially shade during noon on bright days, and you will have flowering plants which, on a small scale, will be fit to compete with more pretentious ones—plants with foliage from twelve to fourteen inches in length, completely hiding the pots, and with flowering scapes, two or more in number, each plant from eighteen to twenty-four inches in height, with from three to six whorles or tiers of flowers each. The plants succeed well planted out here, though not so luxuriantly as in-doors. There is a row of it here as a centre plant in a circularly planted border of Myosotis dissitiflora, which is now taking the place of early Tulips, and I consider that it does not look at all amiss.—*C. P. in Gardeners' Record.*

Echeveria Secunda Glauca.

THIS very useful and effective plant cannot be too extensively grown for the purpose of edging beds in the flower garden. It is of very easy culture, and can be increased easily by off-sets, which they produce freely in their growing season; their nice green fleshy leaves, compact habit, and their numerous spikes of orange pitcher-like flowers,

which hang so gracefully over the edges of the beds, render them great favorites in the flower garden. It is used very extensively in London. The sides and ends of the beds are raised fully nine inches above the turf, and are made up of an admixture of clay and cow-dung, which becomes very adhesive, and, therefore, sticks together like cement, thus forming a kind of basin, thereby securing the water that falls from the sky, or otherwise, to the great benefit of the occupants of the beds. In the edging of these beds the Sempervivum of sorts used with Echeverias; the former are planted very closely together in the sides and ends of the edging surface, and the latter on the top, thus producing a very pleasing effect, alike when viewed from a distance and when looked direct on; thus it will be seen that, though the sides and ends of the beds are raised considerably above the turf level, the whole is furnished in a very effective manner, and what little of the surface of the edges can be seen appears as if a plasterer had been to work on them, they are so smooth and firm. The Echeverias are very easily wintered. We winter hundreds of them in 60 and 48-sized pots (the old plants in the latter, and the off-sets in the former), potted in soil from the waste soil heap, moderately firm, and from the time that they have been potted (October or November) they receive no water until the following spring, and treated in this way we do not lose two and a half per cent. of the plants. Last autumn a correspondent of the *Gardeners' Chronicle* recommended tying them up by the heels in a dry shed as the best and safest (and I should say the easiest) way of wintering the Echeveria; therefore I thought I would try the experiment myself, and accordingly I had five or six plants tied together by the heels and suspended from the stage in one of the greenhouses, and now (May 17) they are quite fresh, and have produced off-sets, and emitted a host of little white feeders. I believe thousands could be wintered in this way, by tying them closely together on strings, and then tied up to nails driven into the joists in some dry shed or loft—tied up to rafters where the room would not be missed. —*H. W. Ward in Gardeners' Record.*

A Sorcerer and an Ink Plant.

MM. Rabuteau and Pryre, well known French botanists, give a description in *Galignani* of a noted plant which grows in the vicinity of the French settlement of Gaboon, and which is called by the name of M'Boondoo. It is very difficult to procure, because the sorcerers of the country have always concealed the plant with great care from the profane, so that its properties are in a great measure a sacred mystery. These botanists, however, succeeded in finding it themselves, in a moist soil, in the neighborhood of the river Como, at thirty leagues from the frontier. The roots vary in thickness from about one-half of an inch to one and a quarter, and their length is from twelve to eighteen inches. The rind, whether fresh or dry, is reddish outside and a vivid red within. Both root and bark are exceedingly bitter.

There is a remarkable plant, peculiar to New Granada, which, if ink-makers could only grow in sufficient quantity in this country, would doubtless prove a profitable enterprise. The plant in question is commonly known as the ink plant, and it is simply the juice that is used, without any preparation. Its properties seem, according to a tradition which there prevails, to have been discovered during the Spanish administration. A number of written documents, destined for the mother country, were embarked in a vessel and transmitted round the cape. The voyage was unusually tempestuous, and the documents got wet with salt water. Those written with common ink became nearly illegible, whereas those written with "chanchi"—the name of the juice—remained unaltered. A decree was therefore issued that all government communications should in future be written with the vegetable juice, instead of the prepared article. This vegetable ink is of a reddish color when freshly written, becoming perfectly black after a few hours, and it has the recommendation of not corroding a steel pen so readily as ordinary ink.

A Leaf Plant.

THE following story of a singular plant is told by Rev. Dr. Babb, corresponding editor of the "Herald and Presbyter," who writes from San Jose, Cal., as follows:

A friend, whom we were visiting a few weeks since, gave us a leaf from a plant in her window, and told us to pin it up where it would get as much sunshine as possible, and watch the result. It was an oval-shaped leaf about two inches long. We fastened it to a sash on the eastern side of the house. After a few days there were signs of life at one of the points on the edge of the leaf. The end of the vein was expanding like a bud. Slowly the development went on until a tiny plant was formed there, with roots, and stem, and leaves. Without soil, without moisture, without any sign of a germ, from just such a point as you find a score or more of on the edge of an ordinary leaf, this complete specimen of vegetable life came forth to excite our wonder. When the new plant was an inch or so long we planted it in a pot, and it is growing there.

Before we cut off this first plant another point on the edge of the leaf began to bud. Soon roots appeared, then a stem, and then branches, as in the former case. We have now two plants in pots from that leaf. The production of those two seems to have exhausted its vitality, and it has begun to shrivel. We are assured that each leaf of the plants we have potted will, when full grown, have this same power of producing perfect plants from the ends of their veins.

I can find nothing in any work on botany that I have access to about these plants, and their peculiar mode of propagation. They are rare here, and nobody seems to know where they came from. They are called "air plants." But the air plant of Wood's Botany is simply a parasite. It attaches itself to some other vegetable, and draws nourishment from it. But this is not a plant foreign to the leaf, and growing upon it. It is a plant that grows out of the leaf, and that when mature bears scores of just such leaves. Well may we cry with David, "O Lord, how manifold are thy works!"

The Flower Garden.

Carpet Bedding.

WHERE hardy plants are used this is, perhaps, the easiest, certainly the cheapest, and, possibly, the laziest style of gardening. I would wish to raise a warning voice to amateurs on the subject, having felt the demoralizing effect of the last superlative in myself, and, therefore, I can speak from experience. I will not own how many seasons the following arrangement of a border and beds has stood. As all looked as well as possible, uninjured by any weather or season, we were thankful to let them stand, having, in our small way, always more trials, experiments and work on hand in the garden than we can get through; and to have a border that required no digging, no manure, no time or labor, and yet to be filled with increasing and flourishing plants, is a temptation difficult to resist. The border is eighty-six feet long and five feet eight inches broad, exposed to the full sun, which is reflected off a low wall at the back, and trees beyond the wall, which intercept rain, dew and frost, and whose roots, below the wall, eat up all nourishment in the soil. In short, a very hot, dry and exhausted border, and suitable, therefore, for succulents, hoary and variegated plants. The whole is a carpet of Sedum acre aureum, margined at the back with a row of Sempervivum tectorum, and in front with S. calcareum, a narrow band of Sedum lydium forming a green line between the grey Houseleeks and the Sedum acre when it has got its yellow growth on. A line of purple Crocuses within the bottom verge completes the border in front, and behind the native Houseleeks is a row of Rosemary, which, when first planted, admitted of a variegated Pelargonium between each plant in summer, or a white variegated Kale in winter. Now, in spite of constant cutting for the inmates of the Royal Infirmary and the Blind Asylum, the Rosemary this winter will bear nothing between, so it is simply an aromatic, spiky edge. In the carpet of gold

Sedum are cut out sixteen circles of grey Sedum or Saxifrage, alternating with small Houseleeks, as Sempervivum montanum, etc., the object being that these rings show out of the carpet by color or form, either when it is green or yellow. The circles are filled in summer with bright-leaved Pelargoniums, which cannot have too much sun, and in winter with purple and lilac variegated Kale. In the flat piece of groundwork between each circle is a single good-sized plant of variegated tree Ivy, Cineraria acanthifolia, Yucca, or Aloe. In summer a tuft of blue Lobelia was dotted at the four corners of the flat piece of gold Sedum, which in winter is replaced by Carex japonica variegata, Snowflakes and Scilla bifolia. The Leucojum are in flower while the Sedum is still green, and the blue Scillas tell when it turns gold. This arrangement certainly requires the minimum of time, trouble and expense, for the good effect it has. Some fresh soil, of course, is required before planting the summer plants, and the Sedums are cut into shape in spring, where they have encroached on rings or margins. When the plants on the wall—Roses, Chrysanthemums, Clematis, Smilax, Jasminum nudiflorum, Ampelopsis Veitchii—require pruning, training, or to be gathered, careful, steady footsteps do the Sedums no harm, rather otherwise, and weeds can hardly make their way through the consolidated groundwork. The soil is so utterly dry and ash-like that Verbenas and Pelargoniums have stood the whole winter, and I have an idea that we might venture to leave out many a plant (or even plunge them for the winter in such a border) that would suffer or be killed in properly dug and worked ground, and this, I fancy, is the great advantage of the carpet-bedding, and one that admits of progress and experiment; at the same time the mere saving of trouble is such a temptation, and, indeed, so much of a necessity in many cases, that a warning voice must be raised, or it is possible that this fashion may end in a standstill—worse, as far as progress is concerned, than even the summer bedding, when carried to excess, led to. The centre beds consist of a Yucca or variegated Aloe, centre plant, the Aloe replaced in winter by a Phillyrea or Box; groundwork of the common grey Sedum dotted with Carex japonica variegata, a ring of variegated Ivy, and edged with Crocuses. A few scarlet Tulips on the grey groundwork finishes off for spring. The groundwork of the opposite bed is the dark-leaved Ajuga orientalis fol. purpureis, dotted with Sedum spectabile, edged also with Ivy and Crocuses; and another pair of "lazybeds" are composed of a tender Cupressus (?), replaced in winter by a hardy evergreen and the Ajuga groundwork, dotted with Euonymus japonica aurea, and edged with Euonymus radicans variegata and Crocuses; when the dark blue flowers of Ajuga were in bloom these were charming little beds. The gold Euonymus has stood the winters of 1871, 1872 and 1873; it suffered in 1870, and my belief is that the drying effect of the groundwork has both kept up bright variegation (only one plant of fifteen having sported a branch back to green), and so checked a gross growth that in spite of the late and wet season the plants were in a condition to resist the thirteen degrees of frost we had here last winter. We find a Sedum groundwork (a solid sod) saves us fully six degrees of frost in the soil. We are near the sea, which often means no frost at all, and we can carry on our winter bedding work in such beds when we are stopped on uncovered ones. The roots and necks of the dotted plants are very considerably protected, and I think something useful and improving might be gained by experimenting on this system. One other disadvantage of a Sedum groundwork, and I have done. A neighboring walk (not much used) was so hopelessly dotted with the gold-tipped Sedum that any hoeing or hand-picking merely broke and spread it, and we had to skin the whole walk, and have a complete new coating of fresh yellow ballast, and thorough and repeated rollings. We flatter ourselves that we are safe until next year. Such an accident can be avoided by using this inveterate Stonecrop on beds of grass, not on a border with gravel walk. It is our intention to lift and rearrange our little succu-

lent border next spring, and collect there all our treasures in that department. The manure required to keep that border cool, and to feed plants of decent growth, would have gone far to supply us with Cauliflowers. It is a wise plan to turn one's disadvantages into advantages, and there is no end of study, variety, beauty and interest in a succulent border, easy to grow, difficult to know, and quite distinct from mere lazy carpet bedding. —*F. J. Hope, in Gardeners' Chronicle.*

New Plants of 1875.

AMONG many of the various lists of novelties we select a few Gladiolus which seem worth notice. As yet they are scarce and high to American purchasers:

Andromede.—Long spike of large and perfect flowers, of rich rose color, tinted with carmine and streaked with white. Large yellow blotch.

Astree.—Pure white, with violet carmine blotch and pale lilac throat; new shade of color.

George Such.—(So named in France.) Very dazzling orange red, slightly flamed with Carmine; fine, velvety carmine spots. Unique in color.

Giganteus.—Grand spike of large flowers; color, fine rose, shaded with cherry; upper petals striped with white, and spotted with dark carmine.

Grand Lilas.—Tall spike of beautiful, delicate lilac flowers, darkening towards the edges. A novel and exquisite color.

Hercules.—Superb flowers on a fine spike; brilliant, velvety scarlet, flamed with orange-red; violet blotch on a mauve ground. Wonderfully effective.

Lord Hawke —Very long spike and flowers of great size; fine rosy carmine with transparent throat, each petal being divided with a white line and spotted with white. Very remarkable.

Pactole.—Beautiful spike of pure yellow flowers with slight rosy border; lower petals shaded with darker yellow. A fine addition to the limited number of yellow varieties.

Garden Gossip.

Suggestive Notes.

Grapes in Pots.—In addition to the value of the fruit of foreign grapes, when properly grown in large-sized pots or boxes, under glass, they form as handsome an adornment for the table, or for exhibition purposes, as the gardener's skill can invent. Just now they need attention in the way of frequent syringing and a weekly supply of manure water, to induce a healthy growth and large clusters.

A good, strong one-year-old cane is sufficient to make a fruiting vine, if the requisite care is bestowed upon it the succeeding season. All that is necessary is to cut it back to, say, 2 feet in length, shift into a size larger pot, with a mulch of short, rich manure on the surface. As the buds push and show blossoms, pinch the shoots at the third bud beyond the bunch, and the non-fruiting shoots at about 9 inches in length. Pinch back the terminal shoot, of course, and, as the season progresses, again pinch as the growth requires. Syringing must not be so freely given when the flowers are expanded, nor yet when the fruit is coloring, but at all other times; it is the great secret of success in producing healthy vines and beautiful fruit.

A Fine Native Tree.—Just as the Magnolias are going out of flower, excepting the Great-leaved Magnolia (M. macrophylla) and the Yellow Magnolia (M. cordata), their near relative, the Tulip Tree (Liriodendron tulipifera), is a sheet of bloom. It may not be too much to say that it is one of the most beautiful of our native trees, producing attractive flowers, for although not as showy as some others, yet its tint is peculiar to itself, and the form, which resembles large tulips, is certainly very attractive. The foliage, too, so large and glossy, and, in a healthy specimen, such a fine tint of green, is not the least of its valuable features. A specimen standing alone on a large lawn, as we have occasionally seen it, imparts a suggestion of grandeur to its sur-

roundings. It is not difficult to transplant when quite young, say two or three years of age, but when six or eight feet in height it quite frequently fails.

Nursery-grown trees, however, give greater satisfaction in the end, when properly dug and replanted.

Fuchsias for Bedding.—The owner of a choice shady corner cannot have more beautiful plants for this situation than a bed of Fuchsias of assorted colors.

It is a mistaken idea that they will not live in the open air, as they prefer it, provided there is plenty of moisture and a partial shade. In varieties the large-flowered single kinds should have the preference for bedding, as being more showy. Attention must be paid to staking them carefully; and when any of the shoots exhibit a desire to ramble or to outstrip the others, pinch it back. The beauty of these plants is greatly enhanced by training them in a pyramidal form, with the branches gracefully curving down on every side.

Old plants with strong, woody stems may be formed into handsome, miniature trees, when planted out, and possibly succeed better than young specimens recently struck from cuttings.

Growing Celery.—We think the old-fashioned system of digging deep trenches for Celery, almost similar to the foundations for a barn, to be a foolish expenditure of time. Experienced gardeners say the dwarf solid varieties, of which the *Boston Market* is a good example, are the only kinds to grow; therefore, as height is not an object, what is the use in a deep trench?

A shallow, depressed, gutter-like trench is all that is necessary in this respect, but be sure that the soil is made deep and rich. In the earlier stages of the plant's growth give it as much moisture as it is possible to procure, but when the growth is of full size the irrigation may be abandoned, and the hilling-up substituted in its place. Some recommend not hilling-up until the plants are secure in their winter quarters, but, for early use, at least, this must be performed before using, of course.

The Cherry Crop.—The present season will long be remembered throughout many portions of the Eastern States, or, at least, the Middle States, for its bountiful crop of cherries. The first of any importance was the *Early Purple Guigne*, which was literally crowded with the weight of purplish red fruit.

Right after it passed away the *Early Richmond* put in an appearance, and although scarcely palatable for the dessert, has been very acceptable for cooking purposes. The *Elton*, which is one of the most reliable in all seasons, has this year overborne; indeed it would be impossible for trees to perfect more fruit than did some fine old specimens that came under our notice. The dry season has been quite favorable for the maturing of the *Yellow Spanish*, a variable cherry, which we only have an opportunity of testing once in several years; but for all that it is large, handsome and delicious when once obtained.

The *Black Eagle* is full, of course, and as to quality, every one who has cultivated it is willing to testify in its favor. The poor *Black Tartarian*, not poor in quality, but in constitution, is doing the best it can under the circumstances, and the few we get we are abundantly thankful for. Kirtland's Seedlings maintain their high standard this year as usual; they are bearing immensely, and very many of them are of excellent quality. *Kirtland's Mammoth* is truly huge in size, and really good in flavor.

But among so many candidates for popularity, and when all are doing their duty so well, we dislike to particularize too closely.

The Gentians.—This has always been considered an exceedingly difficult family to cultivate properly, as moisture, shade, and a peaty, gritty soil, are essential to their growth. It is useless to plant them in an ordinary flower bed, with the full rays of the sun shining upon them, although we know of instances where this has been done, and the owners wondered why their Gentians would not thrive.

The best of success may be assured by growing them in pots, placed in a pit, and

covered with whitewashed glass. The soil, as above stated, must be composed of peaty, gritty mold, and thoroughly drained. Give them plenty of moisture, but raise the sash a few inches at the bottom each mild day to allow a current of air to pass over the plants, else damp will ensue. We append a list of some of the most desirable for our climate:

Gentiana acaulis is quite dwarf, with thick, leathery leaves, and very large, rich velvety-blue flowers.

G. cruciata grows about six inches high, and produces numerous whorls of dark blue flowers. *G. bavarica*, or the true "Alpine Gentian," is not so difficult to grow if the proper conditions are observed. The bloom is very brilliant, and almost purple in tint.

G. gelida is a lovely species from Siberia, growing about a foot high, with pretty, pale blue flowers. *G. pneumonanthe* is rather perverse under cultivation, but a well established, healthy plant makes a splendid specimen. Large bright blue bloom, *G. verna*, or the "Spring Gentian," is one of the most desirable of the genus. The plant is dwarf in habit, with brilliant blue flowers in profusion.

Care of Lawns.—After all our talk about the beauty of our flower beds, and specimen trees, there is nothing that creates more admiration than a well-kept lawn.

To be above reproach it should be entirely free from weeds, have no inequalities of surface, and the turf must be short, thick, and deep green in color. In walking over it we should be reminded of the finest velvet carpet, as the tread indicates its quality. How to attain all this is easily understood, but not always practiced. A few short rules, however, may prove useful to some of our readers.

Mow frequently, say once a week, if the weather is not unusually dry, but the height of the grass must govern the period. The afternoon is preferable to the morning for performing the operation, as the machine does neater work when the turf is entirely dry. Although the frequent mowing eradicates most weeds, yet the few which remain must be pulled out during moist weather. Frequent rolling assists materially in forming a dense texture. A reasonable dressing of salt and plaster will benefit the growth, and a dressing in the autumn with old, decayed manure, is almost an absolute necessity.

The extent of the trade in Cinchona Bark is almost miraculous.

According to the report in the London Medical Record, the introduction of these trees into India has been about £70,000; and the net profit from the annual sales is put down at from £4,000 to £5,000. At a recent sale in Mincing Lane a lot of Moss Crown bark brought the unusual price of 5s. 9d. per pound; and altogether at this sale 23,646 lbs. were disposed of, realizing the sum of £3,350. Among medical plants the *Cinchona officinalis* takes the most prominent position.

Hall Box for Ivy.—Take a strong piece of board square or round, fasten castors (beadstead size) to the four corners, nail lath or hoops to form a rebate above and below, cover between these with table oil cloth brown or black. Make a number of vine or oak leaves of thick undyed leather, moisten and form veins and mould into shape, then dye with logwood or umber to suit the shade of oilcloth (the former gives a mahogany tint the latter walnut). Form grapes by tying small marbles in pieces of old kid or chamois skin, or procure acorns and oak branches. Take grape vine and form a lattice work by nailing pieces on the rebates from top to bottom and across, weaving in and out. Form a wreath of the leaves and fruit, and when dry varnish. These are elegant.

The Early Beatrice Peach has ripened finely with me this year. Trees planted in 1871 have borne a few each, which were mostly ripe and picked on the 23d of July, and were very handsome with bright color, beautifully red and mottled, juicy and excellent. Their average size was about $1\frac{3}{4}$ by $1\frac{5}{8}$ inches in diameter.—WILLIAM PARRY in *Rural N. Y.*

Gardening.

About Native Raspberries.

BY ANDREW S. FULLER.

A CENTURY or more has been devoted by our pomologists in the vain attempt to acclimate the foreign varieties of the raspberry, in this country. But to-day we are no nearer success than when the first plant or plants were brought to America.

Of course, there is a great difference in the seedlings produced from the *Rubus Idacus* of Europe, some being far more hardy and better adapted to our climate than others, but these variations are not due to climatic influence.

The seedlings raised by the late Dr. Brinckle of Philadelphia, are no more hardy or better adapted to cultivation here, than those raised by Souchett, in France, or Rivers, in England.

The Clark is one of the best and most hardy varieties of the European species which has been produced in this country, but it does not compare in this respect with *Belle de Fontenay* and *Merveille de 4-Saisons*, two French sorts which are as hardy as any of our wild sorts, not excepting those of the Black Cap species, *Rubus occidentalis*. From the above it may readily be seen that it will not do to make the sweeping assertion that some writers have, that "*all* foreign sorts are tender," any more than we would be warranted in claiming that *all* native varieties were hardy.

But the failure of a majority of the foreign sorts in this country is not due so much to their lack of hardiness, as to nonadaptation to climate generally. The heat of summer tends to enfeeble their vigor, and mildew destroys the healthy functions of both leaf and stem, hence the plants are incapable of withstanding the cold of winter. As a proof that it is the hot, dry weather in summer which is so disastrous to the foreign sorts, we have only to compare the plantations in the middle States with those of the northern. Many of the foreign sorts succeed in a few circumscribed localities, but outside of these the native species and their varieties are mainly to be depended upon, both for field and garden culture.

The wild red raspberry, or *Rubus strigosus*, furnishes us the best fruit, both in color and quality. It is a very widely distributed species, but more plentiful in the extreme northern States than in the middle or southern. Wild varieties are numerous; in fact it is not difficult to find very distinct sorts in any locality where this plant abounds.

Quite a number of these natural or wild varieties have found their way into cultivation, but many persons object to cultivating any of them on account of their tendency to produce a great number of suckers from the roots or subterranean stems. This I should consider a great fault if it were not so easily remedied, for once or twice cutting them off with a hoe or cultivator during the summer, will prevent any injury to the stock plant, and a man who does not go through and cultivate his raspberry plantation this number of times in the season, deserves to fail.

Among the best known varieties of this species are the following:

Kirtland.—This is one of the oldest, but is still one of the very best. The berries are only of medium size, slightly conical, bright light red or scarlet, quite firm in texture, and ripening very early. This is an excellent market variety on account of earliness, color and firmness.

Turner.—This is a western sort, originating, I believe, in Illinois, where it has been highly commended. It is exceedingly hardy and prolific. It is a larger variety than the Kirtland, and the berries are of a bright, handsome color, but too soft and brittle for market; at least this is my opinion of it after three years' experience.

Wilmington or *Susquesco.*—The habit of this sort is somewhat dwarfish, the canes being short and stocky. The berries are rather large for a native sort, round, bright light red, and quite firm. A good market sort.

Cuthbert.—This is a new sort, of the pure native stock lately brought to notice, but the most I can say of it is that it promises well.

Herstine's Seedlings.—Of these the *Herstine*, *Elizabeth* and *Saunders* have all failed to come up to "expectations" in my grounds. The first is the best of the three, but it is not as hardy as the *Clarke*, a well known foreign sort, while in quality the fruit is inferior. But several years since, while visiting Mr. Herstine's grounds, I noticed several unnamed seedlings which, in my opinion, gave promise of more value than those selected for propagation and dissemination. I requested Mr. Herstine to send me a plant each of two sorts which I selected, and the next fall he did so, labeling one *Herstine's* 0, and the other *Herstine's* 100. Both have proved to be perfectly hardy, vigorous and productive, although the berries are not as large as the one named *Herstine*, but firm and good. If any one else procured these sorts from Mr. Herstine, or from the grounds since his death, it would be interesting to know how they have succeeded. I have no plants to spare of either.

Purple Cane Raspberries.—The "Old Purple Cane" raspberry, as it is usually called, was cultivated fifty years ago quite extensively on Long Island, the fruit being sold in New York markets. It is still an excellent sort for home use, but too soft and dull-colored to compete with later introduced sorts. These purple cane and purple fruited raspberries doubtless are a distinct species from the native red, *R. strigosus*, and the black caps, *R. occidentalis*, but it has never been recognized or described by our botanists, hence remains nameless as a species. It is occasionally found in high, rocky situations in the northern States, and especially throughout the southern tier of counties in New York, as I have seen it in three myself, and received it from a fourth. The "old Purple Cane" takes root from the tips of the branches as freely as the Black Caps, but the *Philadelphia*, which is unquestionably of the same species, does not. The *Hildreth* is another, and about intermediate between the two just named, and the fruit is also very distinct, being darker than either, and covered with a dense bloom. But it matters not how much the native wild sorts differ in growth, size or color of the fruit. They are always recognizable as belonging to this distinct species, which, for the want of any other name, we may call *Rubus purpurea*. The fruit is never black, although sometimes of a dark purple or maroon color, and the epidermis on the canes is also of a light or dark purple, covered with more or less blue bloom, the same as the fruit.

The *Philadelphia* is the best variety of this species yet introduced, but there are, doubtless, others to be found worthy of cultivation.

Black Cap Raspberries.—Of late these have become quite popular, and in a "*cholera season*" they would doubtless be very beneficial, medicinally, to the community. They are certainly hardy and productive, but it is not every person who can eat them with impunity; still, there are enough who can make their cultivation, both for home use and market, worthy of attention. Having gone through the whole catalogue of varieties, numbering several dozen, I would rest on the following three, ripening in the order named: Doolittle's Mammoth Climber, Seneca and Miami.

"War of Races" in Gardening

BY A. S. FULLER.

OUR philosophers frequently give us very thorough dissertations on the subject of "war between races," wherein they show us that a continuous fight between the different races of plants, as well as animals, is necessary to the existence of each.

It is true that many persons may find it quite difficult to believe that one beautiful creature was created only to be destroyed by another, still the facts all seem to point that way, whether we accept them or no.

But if a man wants to feel the dire necessity of a vigorous and continuous war between races, he has only to attempt the culture of fruits and flowers, or, in other words, have and keep a good garden. Of course I have no inclination to look upon the dark side of any picture, still, a little or a good deal of shade may tend to make us enjoy the sunshine more.

Almost the first appearance of the succulent stems of asparagus in spring is greeted by that imported pest the asparagus beetle, *Criocerus asparagi*. It is a beautiful little insect, of a yellow color, ornamented with black lines on the inner side of each wing-cover, also three black spots reaching to the outer edge. Pretty as this little pest is it will soon deposit eggs upon the asparagus stems, and from these hatch a small, dark colored slug-like larva, which soon shows what it can do towards devouring the plants. Turn in the chickens and a fight between races will soon commence, and although it wages hot and long, the beetles frequently come out masters, for there are several broods of this insect during the season, and as soon as the asparagus stalks reach a height of three or four feet, the beetles can feed and multiply beyond the reach of ordinary fowls. Dusting the plants with freshly slaked lime at this stage, will, however, destroy the soft, black grubs.

A few warm days in spring starts our melons, beans, and various vegetables and plants, and then comes the many species of cut-worms, some cutting off the plants below the surface, others climbing up the stems in search of some succulent leaf, which is more agreeable to their tastes than those lower down. For the next month a constant fight must be kept up or our crops are lost, and even with the most vigorous attack the worms frequently gain the battle.

Beautiful moths flitting about the lamps at night, excite our pity when their wings are scorched. Still, many of the number are only the parents of the greasy-looking cut-worms, which are eating up our melons.

The grapes come into bloom, promising a fine crop, but the "Rose Beetles" are at hand, and unless some more tempting food is near by, they strip the clusters of flowers, leaving us only bare stems, or bunches severely thinned. Hand gathering, or shaking off into vessels half filled with hot water, may reduce the number of this pest, but total extermination is not to be thought of with our present knowledge of its habits. Sometimes the cherry trees, roses and various ornamental plants suffer severely from the attacks of this widely distributed pest. There are few birds that will eat this beetle, the crow being the only one which I ever saw making a "square meal" on what is erroneously termed "Rose Bugs." But almost everybody looks upon the crow as an enemy, hence the scarcity of this intelligent and useful bird where it is most needed, viz.: in our orchards and gardens.

The apple trees scarcely come into bloom before the codling moth is ready to drop an egg into each flower, the grub penetrating the growing fruit, causing many to drop immature, and others to reach the cellar as wormy apples. The canker worms also quite frequently strip the trees of foliage, and tent worms help the destruction of the same. Moth traps, both patent and home-made, are brought into requisition, and although thousands of the pests are destroyed, enough are always left for seed the following year.

Our plums are destroyed by curculios, and the crab apples fare very little better, if none of the former are about to supply a better nidus for the eggs of this hard-shelled pest.

Cucumber beetles, squash bugs, and potato beetles in half dozen species or more, come along in good time to try our patience and consume time which we would fain use in a more agreeable manner.

Peaches are stung, and the trees are bored with borers, and even our pine, spruce and other evergreen trees are preyed upon by various species of insect pest, and, while parasites multiply upon them, and birds destroy, and we enter the fight with poisons and apparently superior knowledge and power, all avail little in keeping the devastating hordes in check. "War of races," truly, but it is like the minute polyp which builds up the coral reefs upon which the stanchest ship may crumble as though made of unburnt clay.

A Beautiful Country Seat.

FEW strangers visiting Baltimore and driving out Charles street avenue, which is one of the most popular drives, and few, indeed, of our own citizens, whom business or pleas-

ure has taken in that direction, but have noticed and admired, about five miles from the city, an Osage Orange hedge of most shapely form, surrounding a lawn handsomely planted, and covered by a turf of such delightful verdure that it would seem to laugh to scorn the doubters who say that under our tropical summer suns the rich green sod of England is unattainable. This attractive place is the summer residence of Mr. Wm. H. Perot, a gentleman noted in our community for his great enthusiasm and fine taste in horticultural art. A recent visit enables us to give some sketch of a few features which contribute to the effect of what is, probably, the best kept place in this vicinity.

The house, placed some distance from the entrance, is gained by an approach not meaninglessly tortuous, but of an easy and graceful curve. The road-making is simply perfection in that infrequent art, and, while wishing to keep inside the limit of unmerited enthusiasm, we must give to the turf, for emerald richness and velvet-like softness, the palm over any other we have ever seen in this country. The solidity and smoothness of the roads were attained only at the expense of thoroughness—the whole soil being removed to the depth of two feet, filled in with stone, the gravel then laid on and rolled. The charming turf was secured by thorough plowing, subsoiling and smoothing, heavy seeding, persistent hand-weeding and constant mowing and rolling. To maintain it in condition the only fertilizers used are ashes, plaster and bone dust. In the hottest seasons the grass does not lose its vivid freshness.

Twenty years ago the site of this lawn was covered with brush and scraggy trees—a wilderness. In clearimg up, the rare good judgment was displayed of preserving some of the indigenous growths, and now some well-grown Dogwoods and Cedars find themselves entirely in place amidst many of the rarest ornamental trees. The plantings have been made, we should judge, slowly and carefully, provision being made not only for present appearance, but for future effect; each tree has an individuality about it, many of them a history. On this side may be seen a Norway Maple, so fully furnished to the ground as to be almost globular in shape, on the other a Magnolia macrophylla of unusual growth and perfect symmetry; here the somewhat rare Salisburia, or Maiden Hair tree, with its peculiar fan-shaped leaves; there a well-grown Kentucky coffee tree, flanked by a native chestnut, bearing fruit of unusual size and rare sweetness; farther on another group, in which what was, perhaps, a native sapling, stands by the side of a rare tree from some foreign nursery.

Blended with the deciduous trees, forming effective groups with them, each setting off to advantage the beauties of the other class, are finely developed evergreens, both native and exotic. A favorite seems to be the White Spruce, whose glaucous leaves are beautiful in the sunlight. A well-grown Balsam Fir was noted as about in its prime, well furnished to the ground, and with none of the scragginess which this tree unfortunately acquires as it grows older. An occasional juniper finds suitable place, but not in formal rows, as too often seen.

More apart to themselves, as inviting closer inspection, are many of the rarer evergreens and deciduous trees. Among the former are to be mentioned flourishing specimens of Nordmann's Silver Fir, thought by many to be the finest evergreen in cultivation; Picea Nobilis, a truly majestic tree of gigantic stature when of age; Picea pinsapo, whose silvery foliage makes it one of the most beautiful of its class; the Deodar, most graceful of Cedars; the newer Retinosporas, destined to become general favorites from their beauty and hardiness; the Hollies, in variety; and, as an experiment, we presume, some Araucarias, which are generally considered too tender to withstand our winters. Of deciduous trees, we noted as rare a very beautiful tree, the Ash-leaved variegated Maple, and another, the Laurel-leaved Oak. In a pot, among some new acquisitions, was a Golden-leaved Chestnut; and we ought to mention a weeping variety, with variegated foliage, of the Japan Cypress. The rare things, however,

are so numerous, that to particularize would be to occupy all our available space with a catalogue-like list.

A point to which we wish to call attention as of practical moment—an object we are always glad to achieve at the same time as giving interesting descriptions—is that in all of the plantings made by Mr. Perot he has chosen from the nurseries *small trees*. The reverse is so often adopted by planters anxious for early effect, that an instance of good results soon ensuing from very small trees is worthy of being noticed as deserving imitation.

The grounds in front of the house are gently undulating, but on the rear they become suddenly broken and almost precipitous. A stream winds through the entire property, and has not only been utilized in driving a wheel to fill the capacious reservoirs, from a perennial spring, but occasionally widened out so as to afford pleasing glimpses of water from several rustic arbors and summer houses picturesquely built, and approached by winding walks. The character of the land is such, indeed, that sudden changes meet the view at every turn, and art, well concealed, has made the most of a natural site, which must at best have been unpromising.

Along the brook many native ferns have been planted, and in the congenial shade flourish and multiply. Advantage is also taken of some favoring sites to form several large plantations of hardy Rhododendrons and Azaleas—a class of plants too much neglected in this section. Of these we presume there are here planted out not less than five or six hundred, which at the time of blooming must present a gorgeous sight.

Around the dwelling and by the sides of the walks and drives are many groups of hardy shrubs and beds of tender plants. All of these, by a simple but convenient arrangement of underground cisterns and pipes, can be watered with very little labor.

The same system of water supply extends to the stables and cow houses (in the latter of which are some of the choicest of Jerseys), the greenhouses, grapery, gardener's house, etc. By a plan of grass alleys and paved gutters the steep hill sides are prevented from washing by rains, and a sod preserved on declivities such as are often found bare.

The greenhouses, two in number, neat and nicely-finished structures, are sheltered under the protection of a hill. In them, under the care of Mr. Reinicke, the gardener, is to be seen a varied collection of fine plants. Much of the material is, of course, at this season, turned out of doors, but a great many handsome things still find quarters in the houses, and look clean and thriving. We noticed a large number of Orchids lately arrived, rather crowded into close quarters, awaiting the completion of a new house which is being built to grow them and a large collection of ferns, which are favorites with Mr. Perot. The grapery, a building of some size and architectural pretensions, is near the other houses, and contains exotic vines and a few nectarines. The vegetable and fruit gardens and pear orchards are near by, with the gardener's house convenient to all.

There are, however, so many horticultural specialties that our memory, without aid from notes, brings up so many new ones that we must, for want of space, leave the subject. It is sufficient to say that there are enough objects of rare interest to occupy a lover of such things for many hours. We do not know that we can more appropriately close this article than by recommending any of our readers who may be convenient to them to see these handsome grounds, whose owner, public-spirited and imbued with the liberality common to all votaries of Horticulture, will, we are sure, give every facility for inspection by those who are fond of good examples of landscape gardening, fine trees and beautiful flowers.—*Am. Farmer.*

A REMARKABLE rose bush adorns the cottage of S. A. Randall, of Santa Rosa, California. It was planted in 1858, and is of the Lamarque variety. Imagine a bouquet of white roses twenty-five feet high, twenty-two feet across, beautifully rounded, with a blossoming surface of four hundred square feet, with four thousand full-blown roses and twenty thousand buds!

Fruit Culture.

The New Apple-tree Disease.

BY S. J. PARKER, M.D.

I CALL it *new*, not because I know it to to be so, but because among the fruit culturists in this vicinity I can find no one who is familiar with it or can explain it. It may be *old*, and only because we are so sensitive to currant-worm devastation, to potatoe-beetle injury, to the scarlet raspberry fungus, and to other late and spreading evils whose hold on the new territory resembles the plum curculio, we fear it, and dread any new foe to field or garden culture.

This newly-observed disease begins by the sudden wilting of all the leaves on the twigs of the ends of a branch. The small twigs or terminal ends, rarely over two to four inches long, they wither to-day, to-morrow begin to dry. By the third or fourth day they are brown, and show at a distance. The young apples, now the size of a cherry to that of a walnut, in a day or two more, are also dead and brown in color, among the leaves. The twigs, often with leaves in contact with the dead ones, so closely do they grow, are totally unaffected. There may be scattered over a whole apple-tree one, five, ten, of such dead twigs, with two to five dead apples among the leaves of each twig, or twigs with no apples. But oftener the disease seems to prefer one side of a tree; on some it is the east, others the north side, south or west, while the rest has no dead twigs. Oftener, perhaps, or at least more conspicuous is it, when one large limb, on any side, as to exposure or sunshine, has all the dead twigs, the rest of the tree being healthy. The disease in these twigs, to this date, of this year, has not gone beyond these short twigs, nor seem to spread from one to another. If it spread, it is by a new and sudden invasion of other and independent twigs. In no case that I have seen has it gone from one twig to that next to it.

I first observed the disease last year on a few trees. Whether connected with it or not, large limbs, affected with it last year, are dead or dying now. If their death is the ultimate effects of this disease, it threatens to be a serious evil. It is too early to say whether it affects old trees more than younger trees, but I suspect it does.

The cause of it is obscure. It certainly is not the effect of a bold sting of a large insect like a locust. Insects, quite a variety of them, are found among the dead leaves. If caused by insect, or insects, I can lay it to the charge of only two. One is a very small red spider or louse that I have repeatedly detected fast to the stem of the leaf, and bedded in the juices it causes to escape. It looks on the stem like a minute drop of red wine, which, touched with the point of a needle, causes the insect, like a spider, to move off a little. The other insect is a larger red spider, that does not cling close to the leaf-stem, but has long legs, wine-red body and legs, the legs redder than the body. This spider spins a web (and webs are seen usually in all dead twigs), and can be seen to suck the juices of the leaf-stem and leaf. When cut, the leaf and leaf-stem has the smell of the crushed spider—a foul, fermenting sort of a smell. These two insects may be but different forms of one insect. If it is the cause of the disease, it must be observed early, because as soon as the leaves are dry, it is in vain to look for this, or these spiders; for then hundreds may be examined and not a spider be found. If the spider is the cause, it should be known.

One good observer, connected with the Cornell University, thinks it may be a microscopic fungus, but says I must not say that he thinks it is, and that next season he will begin to look for it early in the season. I said to him, the sap crystallizes in the diseased leaf-stem and twigs. He replied, "I have observed that too, and have said the crystals under the microscope resemble those of sugar, in the notes I have taken of the disease." To me there is a fungus slightly apparent often on some twigs, but there is not enough of it to account for it, and in the larger number of twigs no fungus can I detect.

All I wish to say in this article is, that the

cause is very obscure; that I have no opinion of the cause; that no insect burrows or channels are to be found in any part of the twigs. That the mycellium of fungus in the leaf and the efflorescences of it in the leaf is occasionally seen, and that, if confined to twigs only, in the apple it is destructive, yet not seriously so. If it has a connection with the death a half year, year or more afterwards, of large limbs and virtually of the whole tree, it is of the greater consequence. As I said early on the Grape phylloxera, as quoted by Dr. Riley, "a cause is at work on the grape that kills the vine-cane occasionally, that no climate or season will account for," and "which needs investigation;" so I now say, I fear this is a disease to be added to the fruit pests, already so numerous.

The White Mulberry is affected with it; the Quince suffers often severely with it, the leaves and stems dying as in the Apple, and the young quinces among them also. The Pear suffers in exactly the same manner, and it needs but a glance to see that it is not pear blight.

It is also important that it be not confounded with the aphis, or apple-tree louse; this curls the leaf, which the disease does not. The aphis has the moultings in the hollows of the curled leaves, the disease does not; the disease makes the leaves deep brown color, the aphis *yellow* dead leaves. Of course the locust sting comes later in the season and can easily be seen. So of other evils and insects. Nor must the decay or rot in the apple, or whatever it may be called, be confounded with this disease. I mean that disease when a part or whole of a tree loses its vitality, ceases to grow, turns yellow in its leaves, large limbs die, and the whole tree at last. "The rot" prevailed in New England and New Jersey a few years ago. It is here now to some extent. The "apple rot," "apple blight," "branch withering," etc., is one or more diseases. *Twig blight*, or the disease I speak of, is another. Enclosed please find a twig killed by this disease, with four apples just out of bloom. The brown is yet seen on parts of the leaf, though changed to a muddy greenish brown since picked off the tree. The twig died to its junction with another twig in full vigor and life.

The Pear Dr. Jules Guyot.

[*From La Revue Horticole.*]

WHEN a seedling pear yields three successive crops of fine and good fruit, we ought to preserve it. When grafted, and its product gains in size and quality, we should propagate it. This is the case with the pear tree—Doctor Jules Guyot.

In fact, the seed from which it sprang was sown a dozen years ago by M. Earnest Baltet, and was developed in the midst of other seedlings of the same age; it surpassed them all by its vigor of growth, as well as by its early fruitfulness. Grafted at the school, on young stocks, its branches from the second year filled themselves with fruit.

Multiplied in the nursery, its subjects, although grafted *sur franc* (not seedling pear stock, I presume, but what we term double working on stocks already worked by budding or grafting), fruiting the third year, whilst its neighbors of other kinds remained unproductive except the Beurré Clairgeau and the Beurré Baltet Père.

The specimen which has served as the model to the designer of the engraving has been gathered from a young tree in the nursery. We have, then, the right to affirm, that from an older tree or from one budded on the quince, larger fruit will be obtained than we have gathered in 1873. The flesh is fine, breaking, juicy, sweet (*sucré*), with an aroma which gives it an agreeable flavor. It ripens the second week in August. The Williams (the Bartlett of America is known, at least written of over the water, only as Williams' Bon Chretien), whose musky flavor does not please everybody, is *preceded in its maturity* by three varieties of the first order, the seducing *Favorite de Clapp*, the valorous *Docteur Jules Guyot*, the succulence of *l'Assomption*, *each* indispensable in a plantation d'Elite.

The pear Dr. Jules Guyot is of a good size, pyriform or calebass form, sometimes acute,

sometimes obtuse towards the stem end, often flattened toward the blossom end; its color at first is sea green (vert de mer), passes to a citron yellow, sometimes watered with rose, but it is susceptible of remaining yellow until mature, lightly herbaceous.

According to our observations, the pear *Docteur Jules Guyot* unites the necessary qualities for admission into either garden or orchard, among fruits proper for market or family use. The vigor and fertility of the tree leaves nothing to desire.

The establishment Baltet Freres à Troyes has dedicated it to our eminent viticulturist, Doctor Jules Guyot, né à Gyé sur Seine (Aube). CHARLES BALTET,

Horticulturist at Troyes.

NOTE.—The points which impressed the translator in the above notice of this pear are as follows:

First, its size; the plate, if a correct representation, shows it to equal the Duchesse, and surpass our largest Bartlett from young trees; its color is good, and its skin, from appearance, will bear shipping well, and, although not so knobby as the Bartlett, its sides are not so regularly smooth as fine specimens of Beurre Clairgeau.

Second, The time of ripening would materially increase its market value over the Bartlett.

Third, Its early fruitfulness on its own roots, and a vigorous grower, adapting it well to orchard culture.

A California Ranch.

NEAR Chico, Cal., about ninety-five miles from Sacramento, is the ranch of Gen. John Bidwell, of which Rev. John Woods gives the following account in the *Interior:*

The ranch contains a little more than 21,000 acres. Sixty miles of substantial post-and-board fencing inclose the tract and separate its different fields. There are several miles in addition of neat paling fence surrounding the mansion, park and gardens. There are in grain this season 5,390 acres. Last season the wheat product of the ranch was 96,000 bushels. It is not considered a grain ranch, however, and there are many farms in the State that far exceed it in that respect. There's a man down at Vallejo, in Napa Valley, who has one field of 35,000 acres in wheat this year. But the beauty of Rancho Chico is the variety of its productions. About 500 acres are in vines, nearly all choice foreign varieties, such as the Rose of Peru, and the White Muscat of Alexandria. The product of the vineyards last season was 12,000 pounds of raisins, and from the inferior and refuse grapes 25,000 gallons of vinegar were manufactured. No wine nor spirits are made from the vineyards of Rancho Chico. The whole process of drying, curing and packing the grapes is conducted on the ranch. Almonds seem to do admirably here, and the almond orchards are a prominent feature of the farm. There are about fifty acres in bearing almond trees, and some 180 acres that have not yet come into bearing. Of plum trees there are fifty acres, and of peaches about the same.

The inclosure in which the family residence stands consists of 340 acres, a portion of which is laid out in flowers, lawns, ornamental shrubbery, walks, drives, etc.; and the rest in gardens and orchards. Here are collected a great variety of fruits, many of them semi-tropical, oranges, cherries, apples, pears, apricots, nectarines, pomegranates, figs, pecans and English walnuts.

The nursery contains some 30,000 trees of all varieties, fruit and ornamental. Of stock there are on the ranch, this spring, about 5,000 sheep, 1,300 head of cattle, 300 horses, and 400 head of hogs. They are milking in the dairy, at present, over 100 cows, and besides the milk distributed to families, make an average of forty-five pounds of butter per day. During the past winter there have been 13,000 cords of wood cut on the ranch.

Fruits in Valleys.

THE importance of atmospheric drainage, or in other words, the point of movement of currents of air, is thus discussed by President Parmelee, of Old Mission, Mich. He says:

"I have long held and preached that hollows, from greater cold, are utterly impracticable as sites for orcharding. People will have it that the different temperatures at different points was owing to the difference in thermometers, and a council of instruments was called at the Farmer's Club, at which were present about ten thermometers, and the trial showed an almost perfect agreement. Mr. Brinkman brought his up to my residence one still, cold evening, and with mine was hung on a twig near the house. After ample time to settle, we hung them in my cherry orchard, lower ground, and they went down 9 deg. We then carried them about a stone's throw west to the top of a ridge, and they came up 8 deg., and the difference of altitude was only about eleven feet. We then took them down on to the little lake between my house and the dock, and they sunk 23 deg. On my return home my thermometer came back to starting point. Since these experiments several neighbors have found as striking differences on their own farms."

I suppose the lesson is to keep orchards out of the hollows, even at high altitudes. Hollows, even if on the top of mountains, will catch the cold air.

The Old White Rose.

AT my native home in Hillsboro', N. H., there stood at the east corner of the house a large White Rose bush, so large, so double, so white, with a light shade of delicate pink when first open to the light, so sweet that my memory will never forget it. When I planted a garden of my own in Iowa, I found the "*old White Rose*" in a Scotch lady's garden, and I got off a few shoots with roots, and have ever since had the same variety, the big white rose bush.

The cane is very large and tall. I went by the side of one of mine to-day, and it is about eight feet high, of a bluish green color, with large, strong spines. I consider this the best of all the June roses. Why is it not in the nurseries? Is it because it is out of fashion?

This old White Rose, the Damask, and the little Burgundy should not go out of fashion while their fragrance meets the nose or their beauty meets the eye.

Mr. Editor, I move that these three roses be placed on the list for general cultivation, and that no nurseryman's catalogue be considered complete until they are in it.

SUEL FOSTER.

Smoke-clouds in Vineyards.

IT is a common practice to protect the vineyards of France and Germany against frost by the production of artificial clouds of smoke. A new method in this operation has been recommended by M. G. Vinard. This consists in mixing gas-tar with sawdust and old straw, and piling the material in large heaps in the vineyards. Despite of rain and moisture, the mixture preserves its inflammability for more than a fortnight. When required for use, the heaps are divided into smaller ones, and distributed in and about the vineyard. If the wind be high, which it is in cases of frost, the heaps burn freely for about three and a half hours, producing a very dense smoke. The artificial cloud which thus envelops the vines considerably decreases the radiation from the ground, and thereby counteracts frost, which is greatest towards morning during calm spring nights, and does so much injury to the tender plants.

Mr. HENRY SHAW, proprietor of the celebrated garden at St. Louis which bears his name, favors *The Prairie Farmer* with his recipe for the wash alluded to some time since in *The Tribune* for protecting trees from the Flat-headed Borer: "To a barrel of water put ten pounds whale or fish-oil soap and five pounds Paris green." Applied during the summer months to ash and other young trees with smooth bark in the recently-planted Tower Grove Park, it prevented the entrance of the insects, which had previously done much harm.

Editor's Portfolio.

American Pomological Society.

The biennial meeting of the American Pomological Society was held in Chicago the first week of September, and was the occasion of a large reunion of horticulturists from all parts of the East. About 150 delegates were present, and the usual exercises of addresses, discussions on the merits of native fruits, were passed through with. President Wilder's address is in his best vein, and a grand contribution it is to the records of American rural literature. Many essays were submitted, yet but few were read, the principal ones being by P. P. Bishop, on "Orange Culture in Florida;" it was very valuable and interesting. Thomas Meehan treated fully on "Fungi," and C. V. Riley spoke on "Insects, Worms and Grasshoppers." The exhibition of fruits was large, but very scattered, and often troublesome to find, this being due to the peculiarities of the building, and the display was less imposing than any time in many years, but there were curious features which gave singular interest to it all. It will be remembered that the display of fruit at Richmond was particularly fine in apples, at St. Louis in grapes, at Boston in pears; but in Chicago there were extensive collections of tropical and semi-tropical fruits, all grown on the coast of the Gulf of Mexico.

Mr. D. Redmond, of Mississippi, had a splendid display of oranges, many varieties, several kinds of lemons, also bananas, pine apples, custard apples, figs, pomegranates, jujubes, Chinese quince, olives and dates; and with these, grown on the same grounds, were two varieties of apples, four kinds of pears, including Bartletts and Beurre Deils, of superior quality.

Close at hand were fruits from Minnesota, and ripe pears from Massachusetts and New York.

The display of apples was less fair and perfect than in preceding years; yet with the light crops of Illinois and the West, it was impossible to expect a great display. There were some very fine collections of plums, and none more handsome were ever shown than those from the Grand Traverse Bay.

The total display of fruits, however, was nearly 7,000 plates of blackberries, shown from Michigan; there were some specimens of unusual size, measuring fully four and a quarter inches round. From Wisconsin the principal display was in crab-apples, there being over fifty sorts Siberian crabs; a curious fact was learned from the Wisconsin fruit growers, that fruits grown along the lake shore were fully four weeks later than those grown in the Mississippi valley, even at points farther north.

The display of collections from other points was as follows: From President Wilder, 270 varieties; Hovey & Co., 115 varieties; F. & L. Clapp had a fine collection of seedlings; also, fruit from Robert Manning and J. W. Manning; pears from John Saul, of Washington, were very large; Ellwanger and Barry showed 250 varieties of pears, and fifty-seven varieties of plums; E. Moody and Sons also had large display of pears, apples and plums; and the finest amateur display was that of J. H. Ricketts, of Newburgh, N. Y., whose collection of hybrid grapes, really the finest and most choice ever seen in the United States, attracted special attention.

Medals were awarded as follows:

First Silver Wilder Medal to Michigan Horticultural Society.

Second Silver Wilder Medal to Iowa State Horticultural Society.

Third Silver Wilder Medal to Wisconsin State Horticultural Society.

Fourth Wilder Medal to Nebraska State Horticultural Society.

Silver Medals, also, to Ellwanger and Barry, E. Moody & Sons, John Saul, J. H. Ricketts, Newburgh, N. Y., for a large collection of seedling grapes of great promise; Isador Bush & Son and Mussner, of Bushberry, Mo., for a collection of native grapes; D. Redmond, Ocean Springs, Miss., for an interesting collection of semi-tropical fruits, including oranges, lemons, pomegranates, bananas, figs, pine apples, etc.; Edward Daniels,

Gunston Hall, Va., for pears and grapes; A. Fahnestock, Toledo, O., for pears; B. G. Smith, Cambridge, Mass., for pears; F. and L. Clapp, Dorchester, Mass., for seedling pears and a fine dish of "Clapp's Favorite;" J. W. Manning, Reading, Mass., for pears; Hovey & Son, Cambridge, Mass., for pears; S. E. Chamberlain, Waterford, Va., apples; B. S. Fox, San Jose, Cal., for seedling pears.

Honorable mention is made of George Balderstone, Colora, Md., for pears; Dr. Humpheries, Galesburg, Ill., for apples; Hellman, Froth and others, of Fairfax county, Va., for general collection; Warsaw (Ill.) Horticultural Society, for apples; G. H. Baker, South Pass, Ill., for apples; Adams (Ill.) Horticultural Society, for general collection; Sedalia (Mo.) Horticultural Society, for general collection of fruit; Wisconsin State Horticultural Society, for general collection, including an interesting contribution from S. P. Pieffer, of Pewaukee; Cambridge (Mass.) Society, for pears; Robert Manning, Salem, Mass., for specimens of pears from historical trees collected by him including the Endicott, planted about 1630; an orange pear tree 285 years old; a Warder, grafted April 19, 1775, and a tree planted by Anthony Thacher, in 1640; B. F. Trunson, Humboldt, Tenn., for general collection.

Acknowledgment of thanks for special services, with award of Medal to President Wilder, Thos. P. James and J. J. Thomas.

Due thanks were made in the President's address to the editor of THE HORTICULTURIST for prolonged labor and courtesies in editing the last volume of the Transactions of the Society.

After a ride through the park and boulevards, with the banquet at the Grand Pacific Hotel, the members returned to their homes.

The too recent return of the editor of this journal from a summer tour to California and the Pacific Coast, must be the occasion of our apology, for inability to attend the exercises, and present more full report.

Dicksonia Antartica as a Basket Plant.

It may not be very generally known, says a correspondent of the Gardener's Magazine, that Dicksonia antartica, one of the most robust of tree ferns, is well adapted for suspended baskets; and a brief announcement of the fact will possibly not be without interest. To those who have not seen it grown in baskets it may appear altogether unfitted for these receptacles, and any assertion to the contrary may by some readers be received with doubt. Of course, large plants with stems are not suitable for this style of culture, as they would not only be wanting in elegance, but they would have an appearance bordering on the ridiculous. The size of the plant is not of so much importance as its being quite stemless; in fact, rather large plants are preferable to those of small size, as the fronds droop over the baskets and have a more effective appearance. One of the baskets suspended along the nave of the Crystal Palace, Sydenham, is occupied with a medium-sized plant of this fern, and it is quite fair to say that it is the most elegant basket in the building. The fern is evidently in a thrifty state, for it has produced fronds from three to four feet in length, which hang over the sides of the basket and nearly hide the wirework. Whether the fronds are drawn down with a little bass I cannot say; but this is a matter of no consequence, for they have a most natural as well as an elegant appearance. It has been in the basket it now occupies for some years past, and was evidently put into it when small. The basket, it may be said for the information of visitors to the Palace, is suspended on the right-hand side of the nave going towards the tropical end, and just beyond the opera theatre.

Tulip Tree.

An admirer of the Tulip Tree speaks of it in the following strain: In habit of growth it closely resembles the common maple, but its conspicuous orange-tinted blossoms and scaly fruits at once suggest its near affinity to magnolias, to which class it belongs. The flowers are not unlike those of a tulip, and hence the name by which it is most generally known. The broadly expanded leaves, instead of being palmate as in the plane, are irregularly four-lobed, and somewhat resemble a saddle in conformation; and it is sometimes

called the "saddle tree" from this peculiarity. The flowers are profusely borne during the summer months, and although not strikingly ornamental on the tree on account of their being somewhat hidden amid the ample foliage, when cut and arranged in a vase with the foliage which naturally belongs to them, they have a distinct and striking appearance. This tree is from 100 to 150 feet in height, but in Europe it rarely exceeds 70 or 80 feet. All through the summer the foliage is of a fresh pale green, and in the autumn it dies off a brilliant golden yellow. Striking effects might, therefore, be obtained by grouping it with *quercus coccinea*, or the purple-leaved peach. In addition to its ornamental properties it is valuable as a timber tree, the wood being firm in texture and capable of taking a fine polish.

Carnivora.

At a meeting of the Edinburgh Botanical Society, a short time since, Dr. Balfour read notes of experiments he had been making on Dionœa muscipula and allied plants. These experiments painfully confirmed the suspicions entertained by Ellis, Curtis, Hooker and Darwin, that the dionœa is a carnivorous and, it may be added, a most brutal plant. Dr. Balfour classified the facts he had observed in regard to it under the heads of irritability, contraction, secretion, digestion and absorption. The irritability, it seems, is resident in six delicate hairs, so placed on the surface of the leaf that no insect can avoid touching them in crawling over. Dr. Balfour touched with a needle every other part of the leaf and no response followed; but no sooner was the point applied to one of these hairs than a contraction of the leaf ensued. Chloroform dropped on a hair caused the leaf to close like a winking eye, but water had no such effect. It was only when the object seized was capable of affording nutrition that the contraction continued for any considerable time. A piece of wood was soon released, and so was a dry fly; but when a live fly or caterpillar or spider was enclosed, the contraction lasted on an average for about three weeks. The leaf at the same time gave out a viscous acid secretion. This appeared to be only the case when an insect was captured, and it was always present on such occasions; but whereas with a fat spider it was abundant, with a shriveled fly there was but little. The notion that any nourishment was obtained from insects so enclosed has been controverted; but Dr. Balfour pointed significantly to the facts that young plants of dionœa under bell-glasses had been found not to thrive so well as those left free, and that while a piece of beef wrapped in another leaf became putrid, a piece enclosed by the dionœa remained perfectly inodorous, but soon lost its red color, and was gradually disintegrated more and more until it was reduced to pulp. This statement, showing the greediness and ferocity of the dionœa, created quite a painful sensation among the members of the Botanical Society, and the chairman, while recommending a continuance of the experiments, wisely suggested that they should be completed before the anti-vivisection act comes into operation, since otherwise Dr. Balfour may get into trouble.—*Pall Mall Gazette.*

Roses for Winter Blooming.

In growing roses for the window the plants should be procured in spring; they should be of small size, and, as a matter of course, should be perfectly healthy at the start. We thus obtain a cheaper and really better foundation for future operations than when a large plant in full bloom is procured. The soil is an important item, and should be composed of thoroughly decayed sods and surface soil (not, however, from a garden), well enriched with good old rotted manure, mixing therewith a little sharp sand. The little plants should be potted into a size larger pot than the one in which it had been previously grown. Place it in a warm, sunny window, soak it thoroughly at first with water, and protect it from the strong light with paper until the leaves no longer wilt. As soon as the weather is sufficiently mild plunge the pots up to the rim in a cold frame, whitewash the glass, and attend to the ventilation and watering every day, regulating the same by the state of the weather. Once a week give them a *weak*

solution of manure water, and occasionally turn them out of the pots to examine the state of the roots; if they are white and growing no fear need be entertained about the tops being green and flourishing. As soon as there is an abundance of fibers around the outside of the ball of soil, the plant may be shifted into a size larger pot; but always bear in mind that one inch larger in diameter will always be sufficient, as plants are not infrequently injured by giving them too large a size. In watering always sprinkle the foliage well, it refreshes and invigorates it wonderfully. Some growers often mulch the surface of the pots with a little tan-bark, or, what is better, rotted manure (never use it fresh from the stables); this tends to keep the soil moist and cool in hot weather. As the excessively hot weather approaches the frame should be made to slope to the north, and during the middle of the day the sash should be raised up at an angle of 45° and fastened with a short prop, but as the sun declines it must be lowered, and closed entirely at sunset. Insects, of course, will annoy the novice, as they do the old gardener, but the green-fly is easily killed with a slight fumigation of tobacco smoke, care being taken not to burn the foliage by allowing it to blaze, and mildew may be driven off by dusting the foliage with flour of sulphur. Earth-worms in the soil are sometimes very annoying; to obviate this plague the pots should be sunk in coal ashes. If at any time a plant should look sickly and cease to grow, the best plan is to head it back, curtail the roots, and give it a smaller pot with fresh soil. By autumn we thus have usually a strong, healthy plant for our winter enjoyment, and it will be a never-failing source of pleasure if kept in perfect health. In selecting varieties by all means choose the Tea Roses; they are much better adapted for pot culture than any other class, are usually very profuse bloomers, exceedingly fragrant, delicate in color and compact in growth. A truism in rose growing is, that those who really love flowers always have good luck, for the fact is such always tend them well.—*A Rose Grower in N. Y. Tribune.*

New Tea Rose Catherine Mermet.

In a recent election of roses, Catherine Mermet—a beautifully-colored illustration of which is given in the current issue of the *Florist and Pomologist*—was placed by a large majority of electors amongst the best twelve roses known; and that it is one of the very finest varieties we have there can be no sort of doubt. Probably, says the *Florist*, if all the good qualities it possesses are taken into consideration, it will be acknowledged to be the best of all the Teas. It is large, of the finest form, constant and floriferous. As a pot plant it is a good, healthy grower, and makes sufficiently strong though not large wood. Probably it would be a much more robust grower in the open air, budded on the briar, which suits most Teas better than any other stock. Though the blooms vary more or less in depth of color, the prevailing tint is flesh-colored rose, with a dash of yellowish buff, but this tint is not generally so deep as it appears in the illustration. On the whole, Catherine Mermet is, as the catalogues say, a "superb" rose, and ought to be in the most choice collection.

New Camellias.

The Jardin d'Hiver is one of those newer continental kinds that are not as yet common in gardens, but it is one that is highly commendable on account of its compact, pyramidal habit. It is free-flowering, and produces fine, large, imbricated dark rose flowers. It has a habit quite distinct from all other kinds I am acquainted with, and any one adding it to their collection of Camellias will, I am sure, be pleased with it. I think it is one of M. Ambroise Verchaffelt's raising or sending out, as he sent it me amongst a large collection I commenced forming here a few years ago. General Cialdini is another beautiful imbricated flower, of perfect form, and a highly commendable kind of a bright carmine color. It bears cutting and buds freely. Matteo Malfin is also a lovely variety; in color it is cerise, with a white mark down the petal. This is really a most beautifully chaste flower, of perfect form, and no collection should be without it.—*Chevalier, in the "Garden."*

Superior Peaches.

We venture the assertion that the recent Fruit Growers' fair in New Orleans had nothing superior to some peaches which were last Saturday presented to us by Mr. David Riggs. Taking two of the largest, one weighed nearly and the other over nine ounces, and they were ten inches in circumference and almost four inches in diameter. Such mammoth peaches were never before grown in this country. They were of the cling variety, but as sweet and juicy as any peach we ever ate. This should encourage others in peach culture, for he has fully demonstrated that as fine peaches can be grown here as in any country. Four years ago he located on the prairie, and now he has several hundred peach trees in full bearing, some of which are of choice grafted varieties, and he intends hereafter to cultivate only the best. We hope others will follow his example.—*Louisiana Sugar Bowl.*

Notes on Geraniums.

In a corner of my little botanical garden I planted a circle with Zonale Geraniums, one of a kind of the most promising varieties, merely to test their respective worth. They are now blooming, and I find I have far too many kinds. Among the scarlets none surpass the old Gen. Grant for profuseness of bloom; it is a poor flower and an open truss, but the color is brilliant. Lucius is grand, but of a lighter shade than the above. Jean Sisley is very fine, as every one knows who cares anything for flowers, its pure white eye making it very conspicuous. Among pinks Master Christine must take precedence for profuseness of bloom and decided color. The new White Clipper is a wonderful bloomer, endures the sun well, and is the first really good white that I have yet tested. Among doubles I like the Gloire de Nancy as well as any other, although none of them yield so many nor as fine trusses as the single varieties. The new Jewel is a dwarf, compact grower, with small trusses of extremely double flowers, deep crimson in color; it promises well for the border. In the variegated-leaved kinds I am not aware of anything to surpass that sterling bronze geranium, Gloire de Corbenay, a variety that stands the sun with perfect impunity. For ribbon gardening, or for massing, it can have no superior, in this locality at least. I had almost forgotten the very beautiful Asa Gray, with its exceedingly conspicuous salmon-orange double flowers. It has been one continuous sheet of bloom the entire season, and is abundantly distinct from anything else.—*N. Y. Tribune.*

To Destroy Moles.

Bryan Tyson, of Washington City, gives the following method for making pills to destroy moles: In early spring, about the time the moles begin to come forth from their winter quarters, make a stiff dough of corn meal, mixing with it a small quantity of arsenic. Make a hole with a finger in the runways, drop in a lump of the dough about the size of a marble, and then cover over with a lump of earth to exclude the light. After the first rain go over the field again and deposit in all freshly-made roads. I once concluded to plant a piece of sandy bottom land in sweet potatoes, but, as it was much infested by moles, my success depended on first exterminating them. A few doses of arsenic given in the way described brought about the desired result, and it was a very rare circumstance to see the track of a mole in this piece of ground during the entire summer.

Wire-Worms.

These are found in the greatest quantities in fresh, new loam, just brought from the fields, and such soil, when used for valuable plants, should be carefully examined, and the wire-worms crushed; their brownish red bodies are easily seen. Mr. Tillary writes to the *Garden* that slices of potatoes or lettuce stems will likewise entice them where they are numerous. The slices should be placed under ground, and then frequently examined. He saved a bed of seedling Gladioluses that were planted in some new loam, which he found afterwards swarmed with wire-worms, by placing slices of potatoes and lettuce stalks in the ground after he found that some of the plants were flagging.

International Horticultural Exhibitions.

The committee for regulating national and international horticultural exhibitions proposes to hold a grand international horticultural exhibition and congress in the Palace of Industry, Amsterdam, in 1876, and has issued a bulletin on the subject.

The last exhibition of this character took place at Amsterdam in 1865, and after so long an interval it is believed that a second display can be made which will be very interesting and attractive. It is proposed that the articles to be exhibited shall be confined to a definite number, as, possibly, to cotton, madder, indigo, gutta-percha, India rubber, ethereal oils, fatty oils and fats, materials for paper manufacture, Dutch cereals, tobacco and Peruvian bark, possibly with the addition of a few minor objects, such as vegetable wax, cachou, sarsaparilla, resins, copal, vanilla, grass plaiting, etc. The precise date of the congress has not yet been fixed, but will be announced hereafter.

Peter Henderson's Greenhouses.

A visitor to Mr. Henderson's grounds will be astonished to find the immense extent of his flower trade. He has six or eight acres all used for flower beds—worth $10,000 per acre alone for building lots. Nearly one-third as much more is under glass. He employs over fifty hands, and has sold as high as 300,000 Verbenas in one season. Such is the way a floral prince manages.

Remedy for Coddling Moth.

At a meeting reported in the *Prairie Farmer*, of Alton, Illinois, Dr. Hull said his lime remedy for coddling moth had always proved effectual. The lime is thrown into the trees when the dew is on, or just after a rain when the fruit is set. A dipper or large spoon may be used, or, best of all, a bellows made for the purpose. The insects will not go where the lime is scattered; they go away.

Hyacinths in Winter.

Why is it that, as a general thing, persons are so unsuccessful in blooming bulbs in the winter? In nine cases out of ten the bulbs do not give the satisfaction they should. We think the mistake is that they are forced into growth too suddenly.

A lady buys, say, half a dozen choice bulbs. She does not care, particularly, to have a succession of bloom. If they flower moderately well she will be perfectly satisfied. They are planted according to directions, and set away in the dark for six weeks. At the end of that time you may find them in the sun, at the sitting-room window. In a day or two the points of green leaves seen near the surface will open with a little compact bunch of color in the centre, and there it will stay until it withers,

Perhaps out of the six bulbs three will throw up spikes of bloom. These will probably prove of the white or lavender varieties, which seem to be of freer habits than others. Last winter we succeeded in growing as fine blooms of hyacinths as we have ever seen, and with very little trouble. Late in December, after our fall stock of bulbs was disposed of, we found a dozen or more hyacinths of various colors had been overlooked. To keep them from spoiling they were hastily planted in four or five large pots, and these set away in an out-building, where they would be free from frost and have very little light. There they were left for three months, and nothing done except to water them occasionally. Expecting little or nothing from them, they were not noticed until leaf and flower stalk were both perfectly developed. The light had not been sufficient to color the flowers, and these were all of a dirty pale green. The pots were now brought to the sitting-room and placed in the full sunshine, and in a few hours each spike had assumed its natural tint. The effect was very beautiful. Not a bulb had failed—red, purple, yellow, blush and white, were all large and perfect.—*Am. Garden.*

A Good Tea Rose for Market Purposes.

I was told the other day, says a correspondent of the *Garden*, that from one dark, apricot-colored Tea Rose, Madame Falcot, worked on a standard briar stock, out of doors, roses had been cut every year, to the value of between 30s. or 40s. a year. It is evident, therefore, that this is a useful rose for furnishing cut bloom for market.